

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY  
Air Quality Division  
1110 West Washington Street • Phoenix, AZ 85007

# AIR QUALITY CONTROL GENERAL PERMIT

for

## HUMAN AND ANIMAL CREMATORIES

(As required by Title 49, Chapter 3, Article 2, Section 49-426, Arizona Revised Statutes)

*This air quality control permit does not relieve applicant of responsibility for meeting all air  
pollution regulations*

THIS GENERAL PERMIT ISSUED SUBJECT TO THE FOLLOWING Conditions contained in Attachments “A”  
and “B”

ADEQ GENERAL PERMIT NUMBER 106 PERMIT CLASS II EXPIRATION DATE December 8, 2009

PERMIT ISSUED THIS 8<sup>th</sup> DAY OF December, 2004

SIGNATURE

Nancy C. Wrona, Director, Air Quality Division

TITLE

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**AIR QUALITY CONTROL GENERAL PERMIT  
FOR  
HUMAN AND ANIMAL CREMATORIES**

**INTRODUCTION**

Owners/operators of crematories may obtain coverage under this General Permit in lieu of an individual permit. Such parties shall do so by obtaining an individual 'Authorization to Operate' (ATO) for each cremator which will attest to their formal agreement to abide by all conditions contained herein.

Permittees covered under this General Permit may operate one or two cremators, up to a total combined capacity of 350 pounds per hour (lbs/hr). Burning hours limitations vary on a daily and annual basis, depending on the size of the cremators and the cremators stack height, as shown in Table 1 on Page 22.

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**AIR QUALITY CONTROL GENERAL PERMIT  
FOR HUMAN AND ANIMAL CREMATORIES**

**ATTACHMENT “A”: GENERAL PROVISIONS**

**I. GENERAL PERMIT EXPIRATION AND RENEWAL**

[A.R.S. § 49-426.F, A.A.C.R18-2-306.A.1, -505]

- A.** This General Permit is valid for a period of five years from the date of issuance. The Director of ADEQ (Director) shall review and may renew this General Permit every five years from its date of issuance. All Permittee’s Authorizations to Operate (ATOs) shall coincide with the term of this General Permit, regardless of when the individual authorization began during this five-year period. If the source is not in compliance with the terms and conditions of this General Permit, the Director may require the Permittee to apply for and obtain an individual permit at any time.
- B.** At the time that the public notice is required, pursuant to issuance of the proposed General Permit renewal, the Director shall notify in writing all Permittees who have been granted, or who have applications pending for, ATO(s) under this General Permit. The written notice shall describe the source’s duty to reapply and may include requests for information required under the proposed General Permit.

**II. COMPLIANCE WITH PERMIT CONDITIONS**

[A.A.C.R18-2-306.A.1]

- A.** The Permittee shall comply with all conditions of this General Permit including all applicable requirements of Arizona air quality statutes and the air quality rules. Any permit noncompliance constitutes a violation of the Arizona Revised Statutes and is grounds for enforcement action, for ATO termination or revocation, or for denial of a renewal application. In addition, non-compliance with any federally enforceable requirements constitutes a violation of the Clean Air Act.
- B.** It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this General Permit.

**III. GENERAL PERMIT REOPENINGS, REVOCATION AND REISSUANCE, OR TERMINATION FOR CAUSE**

[A.A.C.R18-2-321 and -510]

- A.** The Director may reopen and reissue, or terminate this General Permit at any time if:

  - 1. The Director has determined that the emissions from the sources in the facility class cause or contribute to ambient air quality standards violations which are not adequately addressed by the requirements in this General Permit, or
  - 2. The Director has determined that the terms and conditions of this General Permit no longer meet the requirements of A.R.S. §49-426 and 427.
- B.** The Director shall provide written notice to all sources operating under this General Permit prior to reissuance or termination of this General Permit. Such notice shall include an explanation of the basis for the proposed action. Within 180 days of receipt of

the notice of the expiration, termination or cancellation of this General Permit, sources notified shall submit an application to the Director for the appropriate permit.

- C.** The Director may require a source authorized to operate (ATO) under this General Permit to apply for and obtain an individual source permit at any time if:
1. The source is not in compliance with the terms and conditions of this General Permit;
  2. The Director has determined that the emissions from the source or facility class are significant contributors to ambient air quality standard violations which are not adequately addressed by the requirements in this General Permit;
  3. The Director has information which indicates that the effects on human health and the environment from the sources covered under this General Permit are unacceptable;
  4. The Director has reasonable cause to believe that the ATO was obtained by fraud or misrepresentation; or
  5. The person applying for an ATO failed to disclose a material fact required by the permit application or the regulations applicable to the ATO of which the applicant had or should have had knowledge at the time the application was submitted.
- D.** If the Director revokes a source's authority to operate under this General Permit, the Director shall notify the Permittee by certified mail, return receipt requested. The notice shall include a statement detailing the grounds for the revocation of authority and a statement that the Permittee is entitled to a hearing. A source previously authorized to operate under this General Permit may operate under the terms of this General Permit until the earlier of the date it submits a complete application for an individual permit, at which time it may operate under that application, or 180 days after receipt of the notice of revocation of authority to operate under this General Permit.

#### **IV. POSTING OF GENERAL PERMIT**

- A.** Any person who has been granted coverage under this General Permit shall post such General Permit or a certificate of General Permit coverage at the location where the equipment is installed in such a manner as to be clearly visible and accessible.
- B.** All equipment covered by this General Permit shall be clearly marked with a serial number or other equipment number that is listed on the ATO for that piece of equipment.
- C.** A copy of the complete General Permit and associated ATO(s) shall be kept on the site.

#### **V. FEE PAYMENT**

Permittee shall pay fees to the Director pursuant to A.R.S. §49-426(E) and A.A.C. R18-2-511.



## **VI. ANNUAL EMISSIONS INVENTORY QUESTIONNAIRE**

[A.A.C.R18-2-327]

- A.** Permittee shall complete and submit to the Director, the source's annual emissions inventory questionnaire for the previous calendar year. The questionnaire is due by March 31<sup>st</sup> or ninety days after the Director makes the inventory form available each year, whichever occurs later.
- B.** The questionnaire shall be on a form provided by the Director and shall include the information required by A.A.C. R18-2-327.

## **VII. COMPLIANCE CERTIFICATION**

[A.A.C. R18-2-309]

- A.** Permittee shall submit a compliance certification once each year, which describes the compliance status of the source with respect to each General Permit condition and the methods used for determining the compliance status. The Permittee shall list on the compliance certification all items of equipment issued ATO(s), on site at the time of annual certification. This certification shall be submitted by September 30<sup>th</sup> and shall cover the period from September 1 of the previous year to August 31 of the current year.
- B.** The compliance certification shall include the following:

[A.A.C. R18-2-309.2.a, -309.2.c & d, and -309.5.a]

  - 1. Identification of each term or condition of the permit that is the basis of the certification;
  - 2. Identification of the method or other means used by the Permittee for determining the compliance status with each term and condition during the certification period, and whether the methods or other means provide continuous or intermittent data;
  - 3. The status of compliance with the terms and conditions of this permit for the period covered by the certification, based on the methods or means designated in Condition VII.B.2 above. The certification shall identify any permit deviation;
  - 4. Identification of all instances of deviations from permit requirements reported pursuant to Condition XI.B of this attachment;
  - 5. Other facts the Director may require to determine the compliance status of the source.
- C.** A progress report on all outstanding compliance schedules shall be submitted every six months beginning with six months after permit issuance. [A.A.C. R18-2-309.5.d]

## **VIII. CERTIFICATION OF TRUTH, ACCURACY AND COMPLETENESS** [A.A.C.R18-2-309.3]

Any document required to be submitted by this General Permit, including reports, shall contain a certification by a responsible official of truth, accuracy, and completeness. This certification and any other certification required under this part shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

## **IX. INSPECTION AND ENTRY**

[A.A.C.R18-2-309.4]

Upon presentation of credentials and other documents as may be required by law, Permittee shall allow the Department, or an authorized representative (including an authorized contractor acting as a representative of the Department), to perform the following:

- A.** Enter upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this General Permit;
- B.** Have access to and copy, at reasonable times, any records that are required to be kept under the conditions of this General Permit;
- C.** Inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this General Permit;
- D.** Sample or monitor at reasonable time, substances or parameters for the purpose of assuring compliance with the General Permit or other applicable requirements; and
- E.** Record any inspection by use of written, electronic, magnetic and photographic media.

## **X. PERMIT REVISION PURSUANT TO FEDERAL HAZARDOUS AIR POLLUTANT STANDARD**

[A.A.C.R18-2-304.C]

If a source which has been issued ATO(s) becomes subject to a standard promulgated by the Administrator pursuant to Section 112(d) of the Act, then the Permittee shall, within twelve months of the date on which the standard is promulgated, reapply for coverage under the General Permit demonstrating how the source will comply with the standard.

## **XI. EXCESS EMISSIONS, PERMIT DEVIATIONS, AND EMERGENCY REPORTING**

### **A. Excess Emissions Reporting** [A.A.C.R18-2-306.A.5.b, -306.E.3.d and -310]

#### **1. Excess Emissions shall be reported as follows:**

- a.** The Permittee shall report to the Director any emissions in excess of the limits established by this permit. Such report shall be in two parts as specified below:
  - i.** Notification by telephone or facsimile within 24 hours of the time when the Permittee first learned of the occurrence of excess emissions including all available information from Condition XI.A.1.b below;
  - ii.** Detailed written notification by submission of an excess emissions report within 72 hours of the notification pursuant to Condition XI.A.1.a.i above;

- b. The report shall contain the following information:
  - i. Identity of each stack or other emission point where the excess emissions occurred;
  - ii. Magnitude of the excess emissions expressed in the units of the applicable emission limitation and the operating data and calculations used in determining the magnitude of the excess emissions;
  - iii. Date, time and duration, or expected duration, of the excess emissions;
  - iv. Identification of the equipment from which the excess emissions emanated;
  - v. Nature and cause of such emissions;
  - vi. If the excess emissions were the result of a malfunction, steps taken to remedy the malfunction and the steps taken or planned to prevent the recurrence of such malfunctions; and
  - vii. Steps taken to limit the excess emissions. If the excess emissions resulted from start-up or malfunction, the report shall contain a list of the steps taken to comply with the permit procedures.
- 2. In the case of continuous or recurring excess emissions, the notification requirements of this section shall be satisfied if the source provides the required notification after excess emissions are first detected and includes in such notification an estimate of the time the excess emissions will continue. Excess emissions occurring after the estimated time period, or changes in the nature of the emissions as originally reported, shall require additional notification pursuant to Condition XI.A.1 above. [A.A.C. R18-2-310.01.C)]

**B. Permit Deviations Reporting**

[A.A.C. R18-2-306.A.5.b]

The Permittee shall promptly report deviations from permit requirements, including those attributable to upset conditions as defined in the permit, the probable cause of such deviations, and any corrective actions or preventive measures taken. Prompt reporting shall mean that the report was submitted to the Director by certified mail, facsimile, or hand delivery within two working days of the time the deviation occurred.

**C. Emergency Provision**

[A.A.C. R18-2-306.E]

- 1. An “emergency” means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, that require immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An

emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

2. An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if Condition XI.C.3 is met.
3. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:
  - a. An emergency occurred and that the Permittee can identify the cause(s) of the emergency;
  - b. The permitted facility was being properly operated at the time;
  - c. During the period of the emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards or other requirements in the permit; and
  - d. The Permittee submitted notice of the emergency to the Director by certified mail, facsimile, or hand delivery within two working days of the time when emission limitations were exceeded due to the emergency. This notice shall contain a description of the emergency, any steps taken to mitigate emissions, and corrective action taken.
4. In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.
5. This provision is in addition to any emergency or upset provision contained in any applicable requirement.

**D. Compliance Schedule**

[ARS § 49-426(I)(5)]

For any excess emission or permit deviation that cannot be corrected within 72 hours, the Permittee is required to submit a compliance schedule to the Director within 21 days of such occurrence. The compliance schedule shall include a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance with the permit terms or conditions that have been violated.

**E. Affirmative Defenses for Excess Emissions due to Malfunctions, Startup, and Shutdown**

[A.A.C. R18-2-310]

1. Applicability

This condition establishes affirmative defenses for certain emissions in excess of an emission standard or limitation and applies to all emission standards or limitations except for standards or limitations:

- a. Promulgated pursuant to Sections 111 or 112 of the Act;

- b. Promulgated pursuant to Titles IV or VI of the Clean Air Act;
- c. Contained in any Prevention of Significant Deterioration (PSD) or New Source Review (NSR) permit issued by the U.S. EPA;
- d. Contained in A.A.C. R18-2-715(F); or
- e. Included in a permit to meet the requirements of A.A.C. R18-2-406.A.5.

2. Affirmative Defense for Malfunctions

Emissions in excess of an applicable emission limitation due to malfunction shall constitute a violation. When emissions in excess of an applicable emission limitation are due to a malfunction, the Permittee has an affirmative defense to a civil or administrative enforcement proceeding based on that violation, other than a judicial action seeking injunctive relief, if the Permittee has complied with the reporting requirements of Condition XI.A and has demonstrated all of the following:

- a. The excess emissions resulted from a sudden and unavoidable breakdown of process equipment or air pollution control equipment beyond the reasonable control of the Permittee;
- b. The air pollution control equipment, process equipment, or processes were at all times maintained and operated in a manner consistent with good practice for minimizing emissions;
- c. If repairs were required, the repairs were made in an expeditious fashion when the applicable emission limitations were being exceeded. Off-shift labor and overtime were utilized where practicable to ensure that the repairs were made as expeditiously as possible. If off-shift labor and overtime were not utilized, the Permittee satisfactorily demonstrated that the measures were impracticable;
- d. The amount and duration of the excess emissions (including any bypass operation) were minimized to the maximum extent practicable during periods of such emissions;
- e. All reasonable steps were taken to minimize the impact of the excess emissions on ambient air quality;
- f. The excess emissions were not part of a recurring pattern indicative of inadequate design, operation, or maintenance;
- g. During the period of excess emissions there were no exceedances of the relevant ambient air quality standards established in Title 18, Chapter 2, Article 2 of the Arizona Administrative Code that could be attributed to the emitting source;

- h. The excess emissions did not stem from any activity or event that could have been foreseen and avoided, or planned, and could not have been avoided by better operations and maintenance practices;
- i. All emissions monitoring systems were kept in operation if at all practicable; and
- j. The Permittee's actions in response to the excess emissions were documented by contemporaneous records.

3. Affirmative Defense for Startup and Shutdown

- a. Except as provided in Condition XI.E.3.b below, and unless otherwise provided for in the applicable requirement, emissions in excess of an applicable emission limitation due to startup and shutdown shall constitute a violation. When emissions in excess of an applicable emission limitation are due to startup and shutdown, the Permittee has an affirmative defense to a civil or administrative enforcement proceeding based on that violation, other than a judicial action seeking injunctive relief, if the Permittee has complied with the reporting requirements of Condition XI.A and has demonstrated all of the following:
  - i. The excess emissions could not have been prevented through careful and prudent planning and design;
  - ii. If the excess emissions were the result of a bypass of control equipment, the bypass was unavoidable to prevent loss of life, personal injury, or severe damage to air pollution control equipment, production equipment, or other property;
  - iii. The air pollution control equipment, process equipment, or processes were at all times maintained and operated in a manner consistent with good practice for minimizing emissions;
  - iv. The amount and duration of the excess emissions (including any bypass operation) were minimized to the maximum extent practicable during periods of such emissions;
  - v. All reasonable steps were taken to minimize the impact of the excess emissions on ambient air quality;
  - vi. During the period of excess emissions there were no exceedances of the relevant ambient air quality standards established in Title 18, Chapter 2, Article 2 of the Arizona Administrative Code that could be attributed to the emitting source;
  - vii. All emissions monitoring systems were kept in operation if at all practicable; and

- viii. Contemporaneous records documented the Permittee's actions in response to the excess emissions.
  - b. If excess emissions occur due to a malfunction during routine startup and shutdown, then those instances shall be treated as other malfunctions subject to Condition XI.E.2 above.
- 4. Affirmative Defense for Malfunctions during Scheduled Maintenance

If excess emissions occur due to a malfunction during scheduled maintenance, then those instances will be treated as other malfunctions subject to Condition XI.E.2 above.
- 5. Demonstration of Reasonable and Practicable Measures

For an affirmative defense under Condition XI.E.2 or XI.E.3 above, the Permittee shall demonstrate, through submission of the data and information required by Conditions XI.E and XI.A, that all reasonable and practicable measures within the Permittee's control were implemented to prevent the occurrence of the excess emissions.

## **XII. RECORD KEEPING REQUIREMENTS**

### **A. Monitoring Records**

[A.A.C. R18-2-306.A.4.a]

The Permittee shall keep records of all required monitoring information including, but not limited to, the following;

- 1. The date, place as defined in the permit, and time of sampling or measurements;
- 2. The date(s) analyses were performed;
- 3. The name of the company or entity that performed the analyses;
- 4. A description of the analytical techniques or methods used;
- 5. The results of such analyses; and
- 6. The operating conditions existing at the time of sampling or measurement.

- B.** The Permittee shall retain records of all required monitoring data and support information for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.

- C.** All required records shall be maintained either in an unchangeable electronic format or in a handwritten logbook utilizing indelible ink.

### **XIII. REPORTING REQUIREMENTS**

[A.A.C. R18-2-306.A.5]

The Permittee shall submit the following reports:

- A. Compliance certifications in accordance with Condition VII.
- B. Excess emissions, permit deviations, and emergency reports in accordance with Condition XI.
- C. Performance test results in accordance with Condition XVI.G.
- D. Other reports required by any condition in Attachment “B”.

### **XIV. DUTY TO PROVIDE INFORMATION**

- A. The Permittee shall furnish to the Director, within a reasonable time, any information that the Director may request in writing to determine whether cause exists for revoking the General Permit coverage, or to determine compliance with this General Permit. Upon request, the Permittee shall also furnish to the Director copies of records that the Permittee is required to keep under the General Permit. For information claimed confidential, the Permittee shall furnish an additional copy of such records directly to the Director along with a claim of confidentiality. [A.A.C. R18-2-306.A.8.e]
- B. If the Permittee has failed to submit any relevant facts or if the Permittee has submitted incorrect information in a General Permit coverage application, the Permittee shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. [A.A.C. R18-2-304.G]

### **XV. FACILITY CHANGE ALLOWED WITHOUT OBTAINING AN ATO OR INDIVIDUAL PERMIT**

[A.A.C. R18-2-317.02]

- A. Except for a physical change or change in the method of operation at a Class II source subject to logging or notice requirements in Conditions XV.B and XV.C below, a change at a Class II source shall not be subject to revision, notice, or logging requirements under this Section.
- B. The following changes may be made if the source keeps on site records of the changes according to Appendix 3 of the Arizona Administrative Code:
  - 1. Implementing an alternative operating scenario, including raw material changes;
  - 2. Changing process equipment (as long as the change does not require a new ATO), operating procedures, or making any other physical change if the permit requires the change to be logged;
  - 3. Engaging in any new insignificant activity listed in A.A.C. R18-2-101.57.a through A.A.C. R18-2-101.57.i but not listed in the permit;



4. Replacing an item of air pollution control equipment listed in the permit with an identical (same model, different serial number) item. The Director may require verification of efficiency of the new equipment by performance tests; and
  5. A change that results in a decrease in actual emissions if the source wants to claim credit for the decrease in determining whether the source has a net emissions increase for any purpose. The logged information shall include a description of the change that will produce the decrease in actual emissions. A decrease that has not been logged is creditable only if the decrease is quantifiable, enforceable, and otherwise qualifies as a creditable decrease.
- C.** The following changes may be made if the source provides written notice to the Department in advance of the change as provided below:
1. If allowed under the General Permit, replacing an item of air pollution control equipment listed in the permit with one that is not identical but that is substantially similar and has the same or better pollutant removal efficiency: 7 days. The Director may require verification of efficiency of the new equipment by performance tests;
  2. If allowed under the General Permit, replacing an item of air pollution control equipment listed in the permit with one that is not substantially similar but that has the same or better efficiency: 30 days. The Director may require verification of efficiency of the new equipment by performance tests; and
  3. A change that would trigger an applicable requirement that already exists in the permit: 30 days unless otherwise required by the applicable requirement.
- D.** For each change under Condition XV.C above, the written notice shall be by certified mail or hand delivery and shall be received by the Director the minimum amount of time in advance of the change. Notifications of changes associated with emergency conditions, such as malfunctions necessitating the replacement of equipment, may be provided with less than required notice, but must be provided as far in advance of the change, or if advance notification is not practicable, as soon after the change as possible. The written notice shall include:
1. When the proposed change will occur;
  2. A description of the change;
  3. Any change in emissions of regulated air pollutants; and
  4. Any permit term or condition that is no longer applicable as a result of the change.
- E.** The permit shield described in A.A.C. R18-2-325 shall not apply to any change made under this Section, other than implementation of an alternate operating scenario under Condition XV.B.1.

**F.** If a source change is described under both Conditions XV.B and XV.C above, the source shall comply with Condition XV.C above.

**G.** A copy of all logs required under Condition XV.B shall be filed with the Director within 30 days after each anniversary of the permit issuance date. If no changes were made at the source requiring logging, a statement to that effect shall be filed instead.

**H. Logging Requirements**

1. Each log entry required by a change under Condition XV.B shall include the following information:

a. A description of the change, including:

i. A description of any process change;

ii. A description of any equipment change, which does not require a new or revised ATO(s), including both old and new equipment descriptions, model numbers and serial numbers, or any other unique equipment number; and

iii. A description of any process material change.

b. The date and time that the change occurred;

c. The date the entry was made and the first and last name of the person making the entry.

2. Logs shall be kept for 5 years from the date created. Logging shall be performed in indelible ink in a bound logbook with sequentially numbered pages, or in any other form, including electronic format, approved by the Director.

**XVI. TESTING REQUIREMENTS**

[A.A.C. R18-2-312]

**A.** The Permittee shall conduct performance tests as specified in the permit and at such other times as may be required by the Director.

**B. Operational Conditions During Performance Testing**

Tests shall be conducted during operation at the maximum possible capacity of each unit under representative operational conditions unless other conditions are required by the applicable test method or in this permit. With prior written approval from the Director, testing may be performed at a lower rate. Operations during periods of start-up, shutdown, and malfunction (as defined in A.A.C. R18-2-101) shall not constitute representative operational conditions unless otherwise specified in the applicable standard.

**C.** Tests shall be conducted and data reduced in accordance with the test methods and procedures contained in the Arizona Testing Manual unless modified by the Director pursuant to A.A.C. R18-2-312.B.

**D. Test Plan**

At least 14 calendar days prior to performing a test, the Permittee shall submit a test plan to the Director in accordance with A.A.C. R18-2-312.B and the Arizona Testing Manual. This test plan must include the following:

1. Test duration;
2. Test location(s);
3. Test method(s); and
4. Source operation and other parameters that may affect the test result.

**E. Stack Sampling Facilities**

The Permittee shall provide or cause to be provided, performance testing facilities as follows:

1. Sampling ports adequate for test methods applicable to the facility;
2. Safe sampling platform(s);
3. Safe access to sampling platform(s); and
4. Utilities for sampling and testing equipment.

**F. Interpretation of Final Results**

Each performance test shall consist of three separate runs using the applicable test method. Each run shall be conducted for the time and under the conditions specified in the applicable standard. For the purpose of determining compliance with an applicable standard, the arithmetic mean of the results of the three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the three runs is required to be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the Permittee's control, compliance may, upon the Director's approval, be determined using the arithmetic mean of the results of the other two runs. If the Director or the Director's designee is present, tests may only be stopped with the Director's or such designee's approval. If the Director or the Director's designee is not present, tests may only be stopped for good cause. Good cause includes: forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances beyond the Permittee's control. Termination of any test without good cause after the first run is commenced shall constitute a failure of the test. Supporting documentation, which demonstrates good cause, must be submitted.

**G. Report of Final Results**

A written report of the results of all performance tests shall be submitted to the Director within 30 days after the test is performed. The report shall be submitted in accordance with the Arizona Testing Manual and A.A.C. R18-2-312.A.

**XVII. PROPERTY RIGHTS**

[A.A.C. R18-2-306.A.8.d]

This General Permit does not convey any property rights of any sort, or any exclusive privilege.

**XVIII. SEVERABILITY CLAUSE**

[A.A.C. R18-2-306.A.7]

The provisions of this General Permit are severable. In the event of a challenge to any portion of this General Permit, or if any portion of this permit is held invalid, the remaining permit conditions remain valid and in force.

**XIX. PERMIT SHIELD**

[A.A.C. R18-2-325 and -508]

As of the date an ATO for a source is granted, compliance with the conditions of this General Permit shall be deemed compliance with all applicable requirements in effect on the date of General Permit issuance, provided that such applicable requirements are included and expressly identified in this permit. The permit shield shall not apply to any changes made pursuant to Sections XV of this Attachment.

**XX. ACCIDENTAL RELEASE PROGRAM**

[40 CFR 68]

If this source becomes subject to the provisions of 40 CFR Part 68, then the Permittee shall comply with these provisions according to the time line specified in 40 CFR Part 68.

**AIR QUALITY CONTROL GENERAL PERMIT  
FOR  
HUMAN AND ANIMAL CREMATORIES**

**ATTACHMENT “B”: SPECIFIC CONDITIONS**

**I. CONDITIONS FOR COVERAGE**

[A.A.C.R18-2-302.B, -306.01, -501 through -511]

This General Permit covers stationary sources that meet all of the following requirements:

- A.** Each cremator shall be a dual-chamber design, consisting of a primary charging chamber and a secondary chamber (or afterburner), with burners located in each chamber;
- B.** Each cremator stack shall have a minimum height above ground of sixteen (16) feet;
- C.** The cremators stack shall be designed and maintained such that there are no obstructions to stack flow, such as rain caps, unless such devices are designed to automatically open when the incinerator is operated. Properly installed and maintained spark arrestors are not considered obstructions;
- D.** Heat shall be provided by the combustion of natural gas or liquefied petroleum gas only;
- E.** Cremators shall not be used to dispose off any hospital, medical and/or infectious waste;
- F.** The stationary source is not located within Maricopa or Pinal counties; and
- G.** The crematory shall not be a major source as defined under A.A.C. R18-2-101.64.
- H.** **Operators of single and dual source crematories** covered under this General Permit shall limit both daily and annual burning hours, based on cremators charging rate, to those listed in Table 1.

**TABLE 1: BURNING HOUR LIMITATIONS**

	Maximum Charging Rate (lb/hr)	Minimum Stack Height (ft)	Maximum Burning Hours <sup>1</sup>	
			Daily	Annual
			Hrs/day <sup>2</sup>	Hrs/yr <sup>2</sup>
Single Cremator	≤ 100	16	23.5	4525
		18	24	8233
		20	24	8760
	101-150	16	15.5	3017
		18	24	5482
		20	24	8760
	151-200	16	10.5	2010
		18	18.5	3594
		20	24	5977
Dual Cremator	Total ≤ 150	16	15.5	3017
		18	24	5480
		20	24	8760
	151 ≤ Total ≤ 250	16	8.5	1698
		18	16	3085
		20	24	5023
	251 ≤ Total ≤ 350	16	5.5	1141
		18	10.5	2046
		20	17.5	3400
		22	23.5	4480
		24	24	6186
		26	24	8760

1. Burning hours are defined as the cumulative time that the cremator is incinerating material or combusting fuel and excludes cool-down and cleaning periods when no incineration is occurring.
2. The daily and annual hours limitations are based on modeling for the Ambient Air Quality Guidelines as per the Arizona Revised Statutes (A.R.S.) § 49-422. Sources operating in Pima County are further restricted to operations only during the hours between sunrise and sunset as per Condition V.A of this Attachment.

## II. CREMATORY REQUIREMENTS

### A. Opacity Standard

#### 1. Emission Limitation and Standard

- a. The Permittee shall not cause, allow or permit to be emitted into the atmosphere, smoke, fumes, gases, particulate matter or other gas-borne material, which exceeds 20 percent opacity. [A.A.C. R18-2-704.A]  
[P.C.C. §§ 17.16.170.B]
- b. The Permittee shall be exempt from the 20 percent opacity limit in the case of multiple chamber incinerators for not more than 30 seconds in any 60-minute periods. [A.A.C. R18-2-704.D]  
[P.C.C. §§ 17.16.170.E.1]

#### 2. Monitoring and Recordkeeping [A.A.C. R18-2-306.A.3.c]

- a. A certified EPA Reference Method 9 observer shall conduct a monthly survey of visible emissions emanating from the stack of the cremators. If the opacity of the emissions observed appears to exceed 20 percent, the observer shall conduct a certified EPA Reference Method 9 observation. The Permittee shall keep records of the initial survey and any EPA Reference Method 9 observations performed. These records shall include the emission point observed, location of observer, name of observer, date and time of observation, and the results of the observation. If the observation shows a Method 9 opacity reading in excess of 20%, the Permittee shall report this to ADEQ as excess emission and initiate appropriate corrective action to reduce the opacity below 20%. The Permittee shall keep a record of the corrective action performed.
- b. The Permittee shall operate the cremators in accordance with vendor-supplied operations and maintenance instructions. If vendor-supplied operation and maintenance instructions are not available, the Permittee shall prepare an Operation and Maintenance Plan which provides adequate information to properly operate and maintain the cremators in good working order. In the absence of vendor-supplied operations and maintenance instructions, the Permittee shall operate the cremators in accordance with this Operation and Maintenance Plan. A copy of the operation and maintenance instructions shall be kept on site and available for review upon request.

#### 3. Permit Shield [A.A.C. R18-2-325] [P.C.C. §§ 17.12.310]

Compliance with this Condition II.A shall be deemed compliance with A.A.C. R18-2-704.A & D and P.C.C. §§ 17.16.170.B & E.1.

## **B. Particulate Matter Standard**

1. Standards for Crematories built after May 14, 1979 [A.A.C. R18-2-904.B]

Emissions from the cremators stack shall not exceed 0.08 grain per cubic foot, based on dry flue gas at standard conditions, corrected to 12 percent carbon dioxide.

2. Standards for Crematories built on or before May 14, 1979

The Permittee shall not cause, allow or permit the discharge of particulate matter into the atmosphere in any one hour from any incinerator, in excess of the following limits:

- a. Emissions from multiple chamber incinerators shall not exceed 0.1 grain per cubic foot, based on dry flue gas at standard conditions, corrected to 12 percent carbon dioxide. [A.A.C. R18-2-704.B.1]
- b. The Permittee shall be exempt from the particulate matter limit specified under Condition II.B.2.a above for not more than 30 seconds in any 60 minute period. [A.A.C. R18-2-704.D.1]

3. Testing Requirements [A.A.C. R18-2-312]

- a. Should the Permittee have cremators with a charging rate greater than 100 pounds per hour, the Permittee shall conduct a mass emissions performance test on the cremators within 180 days of issuance of the Authorization to Operate under this General Permit. Subsequent mass emissions performance tests shall be conducted if:
  - i. A documented exceedance of the opacity limit occurs, a performance test shall be conducted within 180 days of the exceedance of the opacity limit; or
  - ii. A performance test is deemed necessary by the Director.
- b. Should the Permittee have cremators with a charging rate of less than or equal to 100 pounds per hour, the Permittee shall conduct a mass emission performance test if:
  - iii. A documented exceedance of the opacity limit occurs, a performance test shall be conducted within 180 days of the exceedance of the opacity limit; or
  - ii. A performance test is deemed necessary by the Director.
- c. The use of air or other gaseous diluents solely for the purpose of achieving compliance with a specified mass-concentration standard is prohibited.



- d. Reference Methods in 40 C.F.R. 60, Appendix A, as modified by 40 C.F.R. §60.54, shall be used when required to determine particulate matter concentrations.

4. Permit Shield [A.A.C. R18-2-325]

Compliance with this Condition II.B shall be deemed compliance with A.A.C. R18-2-904.B, A.A.C. R18-2-704.B.1 & D.1.

### **C. Air Pollution Control Requirement**

1. Air Pollution Control Equipment [A.A.C. R18-2-730.G]  
[P.C.C. §§ 17.16.430]

Where a stack, vent or other outlet is at such a level that fumes, gas mist, odor, smoke, vapor or any combination thereof constituting air pollution is discharged to adjoining property, the Director may require the installation of abatement equipment or the alteration of such stack, vent, or other outlet by the owner or operator thereof to a degree that will adequately dilute, reduce or eliminate the discharge of the air pollution to adjoining property.

2. Permit Shield [A.A.C. R18-2-325]  
[P.C.C. §§ 17.12.310]

Compliance with this Condition II.C shall be deemed compliance with A.A.C. R18-2-730.G and P.C.C. §§ 17.16.430.

### **D. Operational Limitations**

[A.A.C. R18-2-730.E.1]  
[P.C.C. §§ 17.16.430.E.1]

1. Cremators constructed or reconstructed prior to January 1, 1989

Temperature of the secondary chamber, as indicated by a temperature-measuring device, shall not be less than 1200° F with a minimum residence time of 0.5 seconds in which gases are released from the charged primary chambers.

2. Cremators constructed or reconstructed on or after January 1, 1989

Temperature of the secondary chamber, as indicated by a temperature-measuring device, shall not be less than 1600° F with a minimum residence time of 0.5 seconds in which gases are released from the charged primary chambers.

3. Monitoring and Record Keeping Requirements [A.A.C. R18-2-306.A.3.c]

- a. The Permittee shall install and maintain a temperature-measuring device to continuously read out the secondary chamber temperature in degrees Fahrenheit during operation of the cremators.

- b. The Permittee shall monitor and record the temperature of the secondary chamber by means of either a temperature chart recorder or manual

records immediately prior to charging each batch into the cremators and once again before the completion of each burn.

4. Permit Shield [A.A.C. R18-2-325]  
[P.C.C. §§ 17.12.310]

Compliance with this Condition II.D shall be deemed compliance with A.A.C. R18-2-730.E.1 and P.C.C. §§ 17.16.430.E.1.

## **E. Odor Provisions**

1. Odor Limiting Standard [A.A.C. R18-2-730.D]  
[P.C.C. §§ 17.16.030]

The Permittee shall not emit gaseous or odorous materials from equipment, operations or premises under his control in such quantities or concentrations as to cause air pollution.

2. Permit Shield [A.A.C. R18-2-325]  
[P.C.C. §§ 17.12.310]

Compliance with this Condition II.E shall be deemed compliance with A.A.C. R18-2-730.D.1 and P.C.C. §§ 17.16.030.

## **F. Limitation on Charge Rate and Hours of Operation**

1. Standard [A.A.C. R18-2-306.A.3.c]

The Permittee shall limit the daily and annual burning hours to those specified in Table 1 on Page 22, and Condition V.A on Page 26 of this Attachment. Daily burning hours shall be calculated on a 24 hour rolling total of the operating times for the cremators, and the annual hours shall be calculated on a 12 month rolling total of the operating times for the cremators.

2. Monitoring and Record Keeping [A.A.C. R18-2-306.A.3.c, -306.A.4, and -704.E]  
[P.C.C. §§ 17.16.170.F]

- a. The Permittee shall record the daily charging rates for the cremators.
- b. The Permittee shall record the daily hours of operation for the cremators, including the date, the starting time (in hours and minutes), the shutting down time (in hours and minutes) and the duration of the burn.
- c. The Permittee shall maintain a rolling twenty-four (24) hour total of the operating times for the cremators.
- d. The Permittee shall maintain a rolling twelve (12) month total of the operating times for the cremators.

3. Permit Shield

[A.A.C. R18-2-325]  
[P.C.C. §§ 17.12.310]

Compliance with this Condition II.F shall be deemed compliance with A.A.C. R18-2-704.E and P.C.C. §§ 17.16.170.F.

### III. NON-POINT SOURCES

#### Particulate Matter and Opacity

- A. The Permittee shall not cause, allow or permit visible emissions from open areas, roadways and streets, storage piles or material handling in excess of 40 percent opacity measured in accordance with the Arizona Testing Manual, Reference Method 9.

[A.A.C. R18-2-612]

- B. The Permittee shall employ the following reasonable precautions to prevent excessive amounts of particulate matter from becoming airborne:

1. Keep dust and other types of air contaminants to a minimum in an open area where construction operations, repair operations, demolition activities, clearing operations, leveling operations, or any earth moving or excavating activities are taking place, by good modern practices such as using an approved dust suppressant or adhesive soil stabilizer, paving, covering, landscaping, continuous wetting, detouring, barring access, or other acceptable means; [A.A.C. R18-2-604.A]
2. Keep dust to a minimum from driveways, parking areas, and vacant lots where motor vehicular activity occurs by using an approved dust suppressant, or adhesive soil stabilizer, or by paving, or by barring access to the property, or by other acceptable means; [A.A.C. R18-2-604.B]
3. Keep dust and other particulate to a minimum by employing dust suppressants, temporary paving, detouring, wetting down or by other reasonable means when a roadway is repaired, constructed, or reconstructed; [A.A.C. R18-2-605.A]
4. Such as the use of dust suppressants before the cleaning of site, roadway, or alley. Earth or other material shall be removed from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water or by other means. [A.A.C. R18-2-804]

- C. Monitoring Requirements

[A.A.C. R18-2-306.A.3.c]

Beginning from the issuance of the permit, an EPA Reference Method 9 observation of visible emissions from all non point sources shall be conducted by a certified EPA Reference Method 9 observer each month.

- D. Permit Shield

[A.A.C. R18-2-325]

Compliance with this Condition III shall be deemed compliance with A.A.C. R18-2-604.A, A.A.C. R18-2-604.B, A.A.C. R18-2-605.A, A.A.C. R18-2-612, and A.A.C. R18-2-804.

#### **IV. MOBILE SOURCES**

The requirements of this section are applicable to mobile sources which either move while emitting air contaminants or are frequently moved during the course of their utilization but are not classified as motor vehicles, agricultural vehicles, or are agricultural equipment used in normal farm operations. Mobile sources shall not include portable sources as defined in A.A.C. R18-2-101.88 [A.A.C. R18-2-801]

##### **Opacity Standards**

###### **A. Emission Limitations/Standards**

The Permittee shall not cause, allow, or permit to be emitted into the atmosphere from any roadway and site cleaning machinery smoke or dust for any period greater than ten consecutive seconds, the opacity of which exceeds 40% opacity. Visible emissions when starting cold equipment shall be exempt from this requirement for the first ten minutes. [A.A.C. R18-2-804.A]

###### **B. Permit Shield**

[A.A.C. R18-2-325]

Compliance with this Condition IV shall be deemed compliance with A.A.C. R18-2-801 and -804.A.

#### **V. ADDITIONAL REQUIREMENTS FOR SOURCES OPERATING IN PIMA COUNTY**

In accordance with A.R.S. §49-480.A, the Board of Supervisors may adopt a program, which shall include provisions for administration, inspection and enforcement of general permits issued pursuant to A.R.S. §49-426, Subsection H. The Permittee shall abide by all permit conditions of this General Permit while operating in Pima County.

The numerical section references to the Pima County Code (P.C.C.) are specifically applicable to Pima County under this General Permit. (In the event that these rules are revised to change the numerical references during the term of this General Permit, the revised numbering system will apply to this General Permit.)

###### **A. Operation of Cremators**

1. Operation Limitation [P.C.C. §§ 17.16.170.A]

The Permittee shall only operate the cremators between the hours of official sunrise and sunset.

2. Permit Shield [P.C.C. §§ 17.12.310]

Compliance with this Condition V.A shall be deemed compliance with P.C.C. §§ 17.16.170.A.

## **B. Odor Provisions**

### **1. Odor Limiting Standards**

[Pima County SIP Rule 344]

- a. The Permittee shall not cause or permit emissions from malodorous matter to cross a property line between the source and a residential, recreational, institutional, education, retail sales, hotel or business premise without minimizing the emissions by applying good modern practices. Malodorous matter shall include but shall not be limited to paints, acids, alkalis, pesticides, fertilizers, and manure.
- b. The Control Officer shall not formally prosecute violations of this rule unless five or more persons register complaints with the Control Officer during a consecutive 12-month period.

### **2. Permit Shield**

[P.C.C. §§ 17.12.310]

Compliance with this Condition V.B shall be deemed compliance with Pima County SIP Rule 344.

## **C. Opacity Standards**

[P.C.C. §§ 17.16.040.A]

### **1. Emission Limitation and Standard**

- a. Permittee shall not cause or permit the effluent from a single emission point, multiple emission point, or fugitive emission source to have an average optical density equal to or greater than the opacity limiting standards specified in Table 2 at the end of this Section, or as otherwise specified in this General Permit, subject to the following provisions:
- b. Opacities (optical densities), as measured in accordance with EPA Reference Method 9, of an effluent shall be measured by a certified visual emission evaluator, approximately following the procedures which were used during his certification, or by an approved and precisely calibrated in-stack monitoring instrument.
- c. A violation of opacity standard shall be determined by measuring and recording a set of consecutive, instantaneous opacities, and calculating the arithmetic average of the measurements with the set unless otherwise noted herein. The measurements shall be made at approximately fifteen-second intervals for a period of at least six minutes, and the number of required measurements shall be specified in Table 2. Sets need not be consecutive in time, and in no case shall two sets overlap. If the average opacity of the set of instantaneous measurements exceeds the maximum allowed by any rule, this shall constitute a violation.
- d. The use of air or other gaseous diluents solely for the purpose of achieving compliance with opacity standard is prohibited.

- e. When the presence of uncombined water is the only reason for failure of a source to otherwise meet the requirements of this Section, this article shall not apply. [P.C.C. §§ 17.16.040.B]

2. Permit Shield [P.C.C. §§ 17.12.310]

Compliance with this Condition V.C shall be deemed compliance with P.C.C. §§ 17.16.040.A & B

**Table 2: EMISSIONS-DISCHARGE OPACITY LIMITATION STANDARDS.**

Type of Source	Instantaneous Opacity Measurement			Maximum allowable Average Opacity (%)
	Required No. (For a set)	Excluded No. (Highest Values)	Number to use for averaging	
Incinerators	27	2	25	20

#### **D. Visibility Provision**

1. Visibility Limitation Standard

- a. Permittee shall not cause, suffer, allow or permit diffusion of visible emissions including fugitive dust, beyond the property boundary line within which the emissions become airborne, without taking all reasonably necessary and feasible precautions to control generation of airborne particulate matter. Sources may be required to cease temporarily the activity or operation, which is causing or contributing to the emissions until reasonably necessary and feasible precautions are taken. [P.C.C. §§ 17.16.050.D]
- b. This subsection shall not apply when wind speed exceed twenty-five miles (25) per hour (using the Beaufort Scale of Wind-Speed Equivalents, or as recorded by the National Weather Service). This exception does not apply if control measures have not been taken or were not commensurate with the size or scope of the emission source. [P.C.C. §§ 17.16.050.D.2]

2. Monitoring

While operating in Pima County, the Permittee shall perform a daily visible emission survey at the property boundary. If visible emissions appear to cross the property boundary, Permittee shall take appropriate corrective action. Permittee shall keep a log of the name of observer, time of observation and a

record of any corrective action taken. Permittee shall report instances of visible emissions beyond the property boundary as excess emission to the Director.

[A.A.C. R18-2-306.A.3.c]

3. Permit Shield [P.C.C. §§ 17.12.310]

Compliance with this Condition V.D shall be deemed compliance with P.C.C. §§ 17.16.050.D.

#### **E. Particulate Matter**

1. Emission Limitation and Standard

- a. Standards for Crematories built after May 14, 1979

Emissions from the cremators stack shall not exceed 0.08 grain per cubic foot, based on dry flue gas at standard conditions, corrected to 12 percent carbon dioxide.

[P.C.C. §§ 17.16.510.B]

- b. Standards for Crematories built before May 14, 1979

- i. Emissions from multiple chamber cremators shall not exceed 0.08 grain per cubic foot, based on dry flue gas at standard conditions, corrected to 12 percent carbon dioxide.

[P.C.C. §§ 17.16.170.C.1]

- ii. The Permittee shall be exempt from the particulate matter limit specified under V.E.2.a above for not more than 30 seconds in any 60-minute periods.

[P.C.C. §§ 17.16.170.E.1]

2. Testing Requirements

The Permittee shall conduct performance testing on the cremators in accordance with the requirements specified in Condition II.B.3 of this Attachment.

3. Permit Shield [P.C.C. §§ 17.12.310]

Compliance with this Condition V.E shall be deemed compliance with P.C.C. §§ 17.16.170.C.1, E.1 and -510.B.